

We Claim:

1. A process of forming an electric conductor on a substrate, consisting essentially of depositing metal particles having a mean particle diameter of about 1 to 10 nanometers and a metal-chelate on the substrate and annealing the deposit, wherein annealing decomposes the metal chelate into decomposition products, consolidates the metal particles and a decomposition product of the metal chelate in the formation of the conductor, and bonds the conductor to the substrate.
2. The process of claim 1 wherein annealing is heating.
3. The process of claim 1 wherein annealing is photolytic action.
4. The process of claim 1 wherein the metal particle comprises nickel.
5. The process of claim 1 wherein the metal-chelate is an organic decomposition compound selected from a group consisting of metal carboxylates, metal β -diketonates, metal amides, metal organometallics and metal alkoxides.
6. The process of claim 1 wherein the substrate is ZnO.
7. The process of claim 4 wherein the metal-chelate is nickel(cyclooctadiene)₂.
8. The process of claim 7 wherein annealing comprises heating at about 200° C or less, for about 2 minutes.
9. A process for forming an electric conductor on a substrate, consisting essentially of mixing metal particles having a mean particle diameter of about 1 to 10 nanometers and a metal-chelate in a solvent, depositing the mixture on the substrate, evaporating the solvent, and annealing the deposit, wherein annealing decomposes the metal chelate into decomposition products, consolidates the metal particles and a decomposition product of the metal chelate in the formation of the conductor, and bonds the conductor to the substrate.
10. The process of claim 9 wherein annealing is heating.
11. The process of claim 9 wherein annealing is photolytic action.
12. The process of claim 9 wherein the metal particle comprises nickel.
13. The process of claim 9 wherein the metal-chelate is an organic decomposition compound selected from a group consisting of metal carboxylates, metal β -diketonates, metal amides, metal organometallics and metal alkoxides.
14. The process of claim 12 wherein the metal-chelate is nickel(cyclooctadiene)₂.
15. The process of claim 14 wherein annealing comprises heating at about 200° C or less, for about 2 minutes.